

## **WHAT IS CLAIMED IS:**

1. A class-A amplifier circuit having output voltage varied according to input voltage comprising:
  - a class-A amplifier;
- 5 a voltage pull-up switch level circuit for generating a pull-up switch level;
  - a voltage pull-up circuit for pulling up an output voltage of the class-A amplifier;
  - a voltage pull-up switch circuit for comparing the output voltage of the
- 10 class-A amplifier with the pull-up switch level, and for driving the voltage pull-up circuit to pull up the output voltage of the class-A amplifier when the output voltage of the class-A amplifier is lower than the pull-up switch level;
- a voltage pull-down switch level circuit for generating a pull-down switch level;
- 15 a voltage pull-down circuit for pulling down the output voltage of the class-A amplifier; and
  - a voltage pull-down switch circuit for comparing the output voltage of the class-A amplifier with the pull-down switch level and for driving the
- 20 voltage pull-down circuit to pull down the output voltage of the class-A amplifier when the output voltage of the class-A amplifier is higher than the pull-up switch level.
2. The class-A amplifier circuit as claimed in claim 1, wherein the voltage pull-up switch level circuit consists of two NMOS transistors for

providing the pull-up switch level.

3. The class-A amplifier circuit as claimed in claim 1, wherein the voltage pull-down switch level circuit consists of two NMOS transistors for providing the pull-down switch level.

5       4. The class-A amplifier circuit as claimed in claim 1, wherein the voltage pull-up circuit is disabled by the voltage pull-up switch circuit when the output voltage of the class-A amplifier is higher than the pull-up switch level.

10      5. The class-A amplifier circuit as claimed in claim 1, wherein the voltage pull-down circuit is disabled by the voltage pull-down switch circuit when the output voltage of the class-A amplifier is lower than the pull-up switch level.

15      6. The class-A amplifier circuit as claimed in claim 1, wherein the voltage pull-up circuit consists of a PMOS transistor, and the PMOS transistor is turned on when the voltage pull-up circuit is driven, so as to pull up the output voltage of the class-A amplifier.

20      7. The class-A amplifier circuit as claimed in claim 1, wherein the voltage pull-down circuit consists of a NMOS transistor, and the NMOS transistor is turned on when the voltage pull-down circuit is driven, so as to pull down the output voltage of the class-A amplifier.

8. The class-A amplifier circuit as claimed in claim 1, further comprising a bias circuit for providing a DC bias for the circuit.